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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/670,531	09/26/2003	Wayne Castleberry	X-9425	6510

7590 07/14/2008

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EXAMINER	
NGUYEN, SON T	
ART UNIT	PAPER NUMBER
3643	

MAIL DATE	DELIVERY MODE
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/670,531	CASTLEBERRY, WAYNE	
	Examiner	Art Unit	
	Son T. Nguyen	3643	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *07 April 2008*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-23,25 and 26* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-23,25-26* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. **Claims 1-26** are rejected under 35 U.S.C. 103(a) as being unpatentable over Pruitt et al. (3373009) in view of Heller et al. (4469502).

For claim 1, Pruitt et al. teach a horticultural growing medium comprising: a flexible diisocyanate foam material without filler material (col. 8, lines 23-27, note that there is no filler listed such as peat, ground scrap foam, etc.) having a cation exchange capacity ranging from about 1.0 to about 1.5 (col. 4, lines 55-68 and table I in col. 5), said horticultural growing medium being capable of supporting plant growth. However, Pruitt et al. do not specifically state diphenylmethane diisocyanate as the preferred diisocyanate foam material.

Heller et al. teach in the same field of endeavor of horticultural growing medium as Pruitt et al., in which Heller et al. employ diphenylmethane diisocyanate material as the preferred foam material (col. 6, lines 42-68). It would have been obvious to one having ordinary skill in the art at the time the invention was made to select diphenylmethane diisocyanate as taught by Heller et al. as the preferred diisocyanate foam material in Pruitt et al.'s growing medium , since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability

for the intended use for high molecular weight and high functionality as a matter of obvious choice.

For claim 2, Pruitt et al. as modified by Heller et al. (emphasis on Pruitt et al.) further teach wherein said cation exchange capacity is about 1.25 (see Table I in col. 5 and explanation of cation exchange in col. 4, lines 55-68).

For claim 3, in addition to the above, Heller et al. further teach wherein said diphenylmethane diisocyanate foam material is taken from a group consisting of polymeric diphenylmethane diisocyanate, crude diphenylmethane diisocyanate, 4,4'-, 2,4'-, 2,2'-diphenylmethane diisocyanate (col. 6, lines 60-68). Thus, the combination of Pruitt et al. as modified by Heller et al. for the diphenylmethane diisocyanate foam material as stated above, teaches polymeric diphenylmethane diisocyanate, crude diphenylmethane diisocyanate, 4,4'-, 2,4'-, 2,2'-diphenylmethane diisocyanate, for the same reason as stated above, i.e. high molecular weight and high functionality of the material.

For claim 4, in addition to the above, Heller et al. further teach wherein said diphenylmethane diisocyanate foam material is polymeric diphenylmethane diisocyanate (col. 6, lines 60-68). Thus, the combination of Pruitt et al. as modified by Heller et al. for the diphenylmethane diisocyanate foam material as stated above, teaches polymeric diphenylmethane diisocyanate, for the same reason as stated above, i.e. high molecular weight and high functionality of the material.

For claim 5, in addition to the above, Heller et al. further teach wherein said diphenylmethane diisocyanate foam material is one or a mixture of 2,2'-, 2,4'- and 4,4'-

diphenylmethane diisocyanate (MDI), polymeric MDI, crude MDI, namely, products of crude diaminodiphenyl methane or a mixture of the same (col. 6, lines 60-68). Thus, the combination of Pruitt et al. as modified by Heller et al. for the diphenylmethane diisocyanate foam material as stated above, teaches one or a mixture of 2,2'-, 2,4'- and 4,4'-diphenylmethane diisocyanate (MDI), polymeric MDI, crude MDI, namely, products of crude diaminodiphenyl methane or a mixture of the same, for the same reason as stated above, i.e. high molecular weight and high functionality of the material.

For claim 6, Pruitt et al. as modified by Heller et al. (emphasis on Pruitt et al.) further teach wherein said foam material has a neutral pH ranging from 6.8 to 7.8 (col. 7, lines 10-22).

For claim 7, Pruitt et al. as modified by Heller et al. (emphasis on Pruitt et al.) further teach wherein said foam material is highly porous (col. 3, lines 33-45) but are silent about the foam material maintains a 60 to 40 air to water ratio. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have the foam material of Pruitt et al. as modified by Heller et al. be maintained with a 60 to 40 air to water ratio, depending on the amount of water and air needed by the plant grown therein, since it has been held that where routine testing and general experimental conditions are present, discovering the optimum or workable ranges until the desired effect is achieved involves only routine skill in the art.

For claim 8, Pruitt et al. as modified by Heller et al. are silent about wherein said foam material has at least 50% of its pores by foam volume ranging in size between 10 and 200 microns. It would have been obvious to one having ordinary skill in the art at

the time the invention was made to have the foam material of Pruitt et al. as modified by Heller et al. with at least 50% of its pores by foam volume ranging in size between 10 and 200 microns, depending on the amount of air (air space for roots) needed by the plant grown therein, since it has been held that where routine testing and general experimental conditions are present, discovering the optimum or workable ranges until the desired effect is achieved involves only routine skill in the art.

For claim 9, Pruitt et al. as modified by Heller et al. are silent about wherein said foam material has about 50% of its pores by foam volume ranging in size from about 40 to about 90 microns. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have the foam material of Pruitt et al. as modified by Heller et al. with about 50% of its pores by foam volume ranging in size from about 40 to about 90 microns, depending on the amount of air (air space for roots) needed by the plant grown therein, since it has been held that where routine testing and general experimental conditions are present, discovering the optimum or workable ranges until the desired effect is achieved involves only routine skill in the art.

For claim 10, Pruitt et al. as modified by Heller et al. are silent about wherein said foam material has pores ranging from 20% to about 25% by foam volume which range in size between about 0.2 microns to about 10 microns. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have the foam material of Pruitt et al. as modified by Heller et al. with pores ranging from 20% to about 25% by foam volume which range in size between about 0.2 microns to about 10 microns, depending on the amount of air (air space for roots) needed by the plant grown

therein, since it has been held that where routine testing and general experimental conditions are present, discovering the optimum or workable ranges until the desired effect is achieved involves only routine skill in the art.

For claim 11, Pruitt et al. as modified by Heller et al. are silent about wherein said foam material has pores ranging from about 25% to about 35% by foam volume which range in size between about 300 microns to about 800 microns. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have the foam material of Pruitt et al. as modified by Heller et al. with pores ranging from about 25% to about 35% by foam volume which range in size between about 300 microns to about 800 microns, depending on the amount of air (air space for roots) needed by the plant grown therein, since it has been held that where routine testing and general experimental conditions are present, discovering the optimum or workable ranges until the desired effect is achieved involves only routine skill in the art.

For claim 12, Pruitt et al. as modified by Heller et al. (emphasis on Pruitt et al.) further teach wherein said foam material is substantially sterile (col. 11, lines 70-75).

For claim 13, Pruitt et al. as modified by Heller et al. are silent about wherein said foam material has pores of about 30% by foam volume which range in size between about 300 microns to about 800 microns. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have the foam material of Pruitt et al. as modified by Heller et al. with pores of about 30% by foam volume which range in size between about 300 microns to about 800 microns, depending on the amount of air (air space for roots) needed by the plant grown therein, since it has been

held that where routine testing and general experimental conditions are present, discovering the optimum or workable ranges until the desired effect is achieved involves only routine skill in the art.

For claim 14, Pruitt et al. as modified by Heller et al. are silent about wherein said foam material has a total porosity ranging from 85% to 95%. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have the foam material of Pruitt et al. as modified by Heller et al. with a total porosity ranging from 85% to 95%, depending on the amount of air (air space for roots) needed by the plant grown therein, since it has been held that where routine testing and general experimental conditions are present, discovering the optimum or workable ranges until the desired effect is achieved involves only routine skill in the art.

For claim 15, Pruitt et al. as modified by Heller et al. are silent about wherein said foam material has a total porosity of about 90% to 92%. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have the foam material of Pruitt et al. as modified by Heller et al. with a total porosity of about 90% to 92%, depending on the amount of air (air space for roots) needed by the plant grown therein, since it has been held that where routine testing and general experimental conditions are present, discovering the optimum or workable ranges until the desired effect is achieved involves only routine skill in the art.

For claims 16-20,25-26, the limitations have been explained in the above, thus, please see the above.

For claims 21 & 22, Pruitt et al. as modified by Heller et al. are silent about wherein said foam material is a sheet with seeds secured thereto or a shaped block with an aperture cut therein. Seed mats made out of foam material with seeds secured thereto and seed blocks are notoriously well known in the art, thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have the foam material of Pruitt et al. as modified by Heller et al. be made into a sheet with seeds secured thereto or a shaped block with an aperture cut therein, since applying a known technique (having foam be made sheet-like to carry seeds or a shaped block with an aperture cut therein) to a known device (foam material used in horticulture growth medium as taught in Pruitt et al. as modified by Heller et al.) would have yielded predictable results and resulted in an improved system (improved system which allows a user diversity of having the foam material be sheet-like to carry seeds thereon or a shaped block with an aperture cut therein). KSR International Co. v. Teleflex Inc., 127 S. Ct. 1727, 1739, 1740, 82 USPQ2d 1385, 1395, 1396 (2007).

For claim 23, Pruitt et al. as modified by Heller et al. (emphasis on Pruitt et al.) further teach wherein said cation exchange capacity is about 1.0 (see Table I in col. 5 and explanation in col. 4, lines 55-68).

Response to Arguments

3. Applicant's arguments filed 4/7/08 have been fully considered but they are not persuasive.

Applicant argued that notwithstanding the Examiner's assertion that Pruitt '009 does not contain a filler material because "no filler [is] listed such as peat,

ground scrap foam, etc." (Examiner's January 7, 2008 Office Action, pg 3), applicant respectfully asserts that the Examiner has made an improper conclusion. The absence of any particular statement does not substantiate the truth of its opposite. This is, in essence, a disclosure by omission that cannot be other than pure speculation because there are literally a nearly infinite number of features not disclosed in Pruitt '009. Instead, a reference must directly or impliedly teach a claimed feature. In Pruitt '009, the absence of text regarding an absence of fillers, without an additional affirmative statement that no fillers are required, cannot be construed to mean that the technology can be used without fillers.

Assuming that Applicant is correct, then every patents known to man can include everything else, thus, the patents can be considered with infinite ingredients, even if the ingredients are not listed or explained in the specification. It is without merit to argue that just because the reference doesn't state fillers doesn't mean that the reference doesn't have it. The purpose of a specification is to explain in detail all parts or ingredients of an invention. If a part or ingredient is not explained in the specification, then that part or ingredient is not in the invention, simple as that. Pruitt does not disclosed fillers in his specification, then it means that it does not have fillers.

Applicant argued that Pruitt includes other additaments or fillers.

The fillers as listed by Applicant in paragraphs [0009][0011] of Applicant's PGPUB 2005/0076564 are not included in Pruitt, even under the additaments, thus, Pruitt does not teach fillers in his growing medium. In light of Applicant's specification,

the fillers are “earth, sand, pear moss, saw dust, manure, compost limestone, coir, ground foam, gypsum, peat, ground scrap foam, or other materials and is not formed from a prepolymer slurry containing water and aggregate material”, to which none of these materials are included in Pruitt. Yes Pruitt does include other additives, but additives are not the same as fillers. The additives in Pruitt are chemical agents that are either imbedded in the foam itself (col. 4, lines 1-5) or incorporated into the foam somehow without hindering porosity of the foam for the roots (col. 3, lines 35-46). Thus, it is clear that the additives of Pruitt are not to "fill" the foam and occupied pores or spaces for root growth. In addition, Applicant’s own invention does include other material in the foam that can be considered as additives or fillers. For example, Applicant's invention includes seeds, fertilizers and nutrients, and carboxylic acids and anhydrides, which if we are to assume fillers to be merely any material or agent that "fills” the foam, then Applicant’s own invention does include fillers. Furthermore, there is no doubt that Applicant's invention also includes additives because in order for the desired pH and cation exchange, some sort of additives have to be incorporated in the foam but not necessary fill the foam volume, this is similar to that of Pruitt.

Applicant argued that one of ordinary skill in the art will know that the “nutrient mixture” disclosed in Pruitt is in fact a filler material.

The Examiner does not believe that one of ordinary skill in the art will know that nutrient mixture is a filler material, unless filler material is given its broadest interpretation as any material that fills the foam, to which filler material is not given its broadest interpretation because clearly from [0009][0011], Applicant defined filler

material as "earth, sand, pear moss, saw dust, manure, compost limestone, coir, ground foam, gypsum, peat, ground scrap foam, or other materials and is not formed from a prepolymer slurry containing water and aggregate material". Nutrient mixture in Pruitt are listed in col. 4, lines 26-54, and none from this list are fillers in light of Applicant's specification nor or they even remote similar to the fillers as listed by Applicant.

Applicant argued that Heller teaches fillers in his polyurethane or foam material.

Heller was not relied on for fillers or without fillers in the foam material. Heller was relied on for a teaching of a known foam type such as diphenylmethane diisocyanate foam. Therefore, to employ a known foam material such as the diphenylmethane diisocyanate foam of Heller as the preferred foam material in Pruitt would have been obvious to one having ordinary skill in the art at the time the invention was made because this type of foam material has a high molecular weight and high functionality.

Applicant argued that it is not obvious how to obtain air water ratios without the use of fillers. Furthermore, as known by those skilled in the art, when one puts additives in foam, pore size is exceptionally difficult to control. Thus pore size is not inherent. Furthermore chemical reactions that take place in filled foam are such that sterility is not inherent in filled foams.

Clearly from Pruitt, he discussed porosity in his foam to accommodate root growth (col. 3, lines 20-46). Pruitt preferred an open-celled foam structure, thus, air to water or pore size is important in Pruitt's foam for root growth. As for specific amount or

size of pore, Pruitt does not state. However, the Examiner believes that through general experimental condition, such as the plant type being grown in the foam, it would be obvious for one of ordinary skill to have various ranges of air/water ratio or pore sizes, depending on the plant's root formation. This has to be done by routine testing and experimentation of different plant types to derive at a range to meet general plant type being grown in the foam. These ranges as claimed by Applicant are merely preferable ranges based on experimentation done to come up with these ranges for the desired plant type.

Applicant argued that one of ordinary skill in the art would realize that polyurethane foam cannot be made without an isocyanate being one of the ingredients. The present invention uses a unique unfilled foam with unexpected properties that support plant growth.

It appears that Applicant's invention does contain some sort of isocyanate as listed in [0032][0033]. In addition, the foam of Applicant also can contain fertilizer, seeds, nutrients, carboxylic acid, and anhydrides, thus, it is not unfilled.

Conclusion

4. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Son T. Nguyen whose telephone number is 571-272-6889. The examiner can normally be reached on Mon-Thu from 10:00am to 5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Peter M. Poon can be reached on 571-272-6891. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Son T. Nguyen/
Primary Examiner, Art Unit 3643